

U.S. Patent Application Serial No. **10/528,137**  
Response to OA dated October 2, 2008

**REMARKS**

Claims 1 and 18 have been amended in order to more particularly point out, and distinctly claim the subject matter which the Applicants regard as their invention. Support for the amendments is found in the paragraphs beginning at page 15, line 4; page 16, line 29; page 17, line 34 and page 27, line 4. The Applicants respectfully submit that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated **October 2, 2008**.

In the Office Action, Claims 1-8 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kogano et al. (U.S. Published Application 2002/0094502) in view of Fujita et al. (U.S. Patent No. 6,238,488). Reconsideration and removal of this rejection are respectfully requested in view of the present claim amendments and the following remarks.

Features relating to the present amendments of Claims 1 and 18 show the following actions and effects:

(1) Since the first gas fed to the small chamber is gas that is inert to the seal cap, the first gas does not provide any chemical influence against the seal cap. (See paragraphs beginning at page 16, line 29 and page 17, line 34 of the present specification)

(2) Since the second gas is prevented from entering the small chamber under filling of the first gas in the small chamber, the second gas does not come in contact with the seal cap. Accordingly, the seal cap is not chemically affected by the second gas that is active to the seal cap. (See paragraphs beginning at page 17, line 28 and page 17, line 34)

U.S. Patent Application Serial No. **10/528,137**  
Response to OA dated October 2, 2008

Regarding Kogano et al., Kogano et al. discloses a structure in which a boat susceptor (19) (corresponding to "cover" of the present invention) is provided to cover a seal cap (17) (corresponding to "seal cap" of the present invention) and a structure in which a purge gas supplying tube (10) (corresponding to "feed opening for supplying a first gas" of the present invention) for supplying a purge gas (corresponding to "first gas" of the present invention) is provided in a furnace opening portion space (21) (corresponding to "small chamber" of the present invention).

However, it is respectfully submitted that Kogano et al. differs from the present invention in the following points:

1. Kogano et al. discloses a structure in which a purge gas fed from a purge gas supplying tube (10) to a furnace opening portion space (21) is discharged through a furnace opening exhausting tube (15). The purge gas is not flowed out to a substrate processing space (20). That is, Kogano et al. does not have any means corresponding to "flow outlet provided in the small chamber for making the first gas flow into the reaction furnace" as in the present invention.

2. Further, although a clearance between the boat susceptor (19) and a reverse-diffusion preventing body (8) seems to correspond to the "flow outlet" of the present invention, the reverse-diffusion preventing body (8) prevents the reverse-diffusion of a contaminant from a furnace opening portion space (21) to a substrate processing space (20), as described in paragraph [0038], and does not have any action of "flow outlet for making the first gas flow into the reaction furnace" as disclosed in the present invention.

3. In the event that the purge gas in Kogano et al. is flowed out of the furnace opening

U.S. Patent Application Serial No. 10/528,137  
Response to OA dated October 2, 2008

portion space (21) to the substrate processing space (20), reverse-diffusion of a contaminant occurs from the furnace opening portion space (21) to the substrate processing space (20) and the problem in Kogano et al. cannot be resolved. That is, in the case of Kogano et al., a technical concept of "making the first gas flow into the reaction furnace" as in the present invention can not be realized.

Thus, it is respectfully submitted that the present invention is substantially different from Kogano et al. in view of the configuration, and the present invention would not be obvious in view of Kogano et al.

Regarding Fujita et al., Fujita et al. discloses a structure in which there is provided a turning table (22) (corresponding to "cover" of the present invention) so as to oppositely face against a lid (24) (corresponding to "seal cap" of the present invention), a structure in which there is provided a cleaning gas supply pipe (38) (corresponding to "feed opening for supplying a first gas" of the present invention) for feeding a cleaning gas (corresponding to "first gas" of the present invention) into a space (corresponding to "small chamber" of the present invention) between the lid (24) and the turning table (22) and a structure in which a process gas supply pipe (36) (corresponding to "feed opening for supplying a second gas" of the present invention) for feeding a predetermined film forming gas or an inert gas is provided at the further downstream side than the cleaning gas supply pipe (38).

However, it is respectfully submitted that Fujita et al. is different from the present invention in view of the following points:

1. Except for the central part of lid (24), lid (24) is not covered by the turning table (22).

U.S. Patent Application Serial No. **10/528,137**  
Response to OA dated October 2, 2008

That is, the turning table (22) does not entirely cover the surface of lid (24) in a substantial entire manner. The structure of Fujita et al. is set such that except for the central part of lid (24), lid (24) is exposed and the gas fed from the process gas supply pipe (36) can enter a space between lid (24) and turning table (22) due to dispersion and be contacted with lid (24). In other words, in the structure of Fujita et al., it is not possible to cause the gas fed from the process gas supply pipe (36) not to contact lid (24). That is, the structure disclosed in Fujita et al. cannot attain the aforesaid actions and effects of the present invention.

Fujita et al. supplies a cleaning gas such as  $\text{ClF}_3$ , etc. from the cleaning gas supply pipe (38) (corresponding to "feed opening for supplying a first gas" of the present invention). That is, Fujita et al. feeds the corrosive gas to a space between lid (24) and turning table (22). Fujita et al. does not feed the first gas that is inert to the seal cap into the space. Fujita et al. does not prevent entrance of the second gas that is active to the seal cap.

Accordingly, it is respectfully submitted that the present invention is distinct from and would not be obvious in view of the teachings of Fujita et al.

Further, Kogano et al. does not teach "making the first gas flow into the reaction furnace" as disclosed in the present invention and it cannot be realized by Kogano et al. In addition, Fujita et al. cannot realize "non-entering of the second gas into the small chamber" or causing the second gas not to be contacted with the seal cap as taught in the present invention. Therefore, there is no motivation to cause Kogano et al. to be combined with Fujita et al.

Still further, even if Kogano et al. and Fujita et al. were combined, it would not be possible

U.S. Patent Application Serial No. **10/528,137**  
Response to OA dated October 12, 2008

to attain the configuration in which entering of the second gas that is active to the seal cap into the small chamber is prevented and the second gas is prevented from coming in to contact with the seal cap as in the present invention.

In view of the amendments to Claims 1 and 18, and the above remarks, removal of this rejection is respectfully requested.

In view of the aforementioned amendments and accompanying remarks, Claims 1-8 and 18, as amended, are believed to be patentable and in condition for allowance, which action, at an early date, is requested.

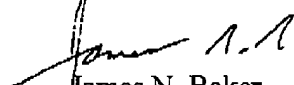
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

U.S. Patent Application Serial No. 10/528,137  
Response to OA dated October 2, 2008

In the event that this paper is not timely filed, the Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

KRATZ, QUINTOS & HANSON, LLP

  
James N. Baker  
Agent for Applicant  
Reg. No. 40,899

JNB/ak

Atty. Docket No. 050161  
Suite 400  
1420 K Street, N.W.  
Washington, D.C. 20005  
(202) 659-2930



23850

PATENT & TRADEMARK OFFICE

Enclosure: Petition for Extension of Time